U.S. Robotics®

SPORTSTER®

HIGH SPEED MODEMS

QUICK-REFERENCE CARD

SPORTSTER 14,400 WITH V.32 *bis*
SPORTSTER 14,400 FAX WITH V.32 *bis*
SPORTSTER 9,600 WITH V.32
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COMMAND SUMMARY*

A	Manual Answer: go off hook in answer mode. Pressing any key aborts the operation.
A/	Re-execute the last command; use to redial. Does not take AT or <Enter>.
Any key	Abort off-hook dial/answer operation and hang up.
AT	Required command prefix, except with A/ and +++. Use alone to test for OK result code.
B*n*	U.S./ITU-T Answer sequence. B0 ITU-T answer sequence–Default B1 U.S. answer tone
D*n*	Dial the specified phone number. Include any of the following options. P Pulse (rotary) dial –Default T Tone dial W Dial, wait for another dial tone, and continue , (Comma) Two-second pause ; (Semicolon) Return to Command mode after dialing " (Quotation mark) Dial the letters that follow ! (Exclamation point) Flash the switch hook @ Dial, wait for quiet answer, and continue R Reverse frequencies
DS*n*	Dial the phone number string stored in NVRAM at position *n*.
E*n*	Command mode local echo. See DIP switch 4. E0 Echo OFF E1 Modem displays keyboard commands
F*n*	Online local echo. F0 Echo ON F1 Echo OFF–Default
H*n*	ON/OFF hook control. H0 Hang up (go on hook) H1 Go off hook
I*n*	Information display. I0 Three-digit product code I1 Results of ROM checksum I2 Results of RAM checksum I3 Reserved I4 Display current modem settings I5 Display nonvolatile memory (NVRAM) settings I6 Display link diagnostics I7 Return product configuration
M*n*	Speaker (Audio Monitor) operation. M0 Speaker always OFF M1 Speaker ON until CONNECT–Default

* Defaults are based on the &F1–Hardware Flow Control template loaded in nonvolatile memory when the modem is shipped.

Mn

M2 Speaker always ON
M3 Speaker ON after dial, through CONNECT

On

Return online.

O0 Return online
O1 Return online and retrain

Qn

Result Codes displayed/suppressed. See DIP switch 3.

Q0 Display result codes
Q1 Quiet mode; no result codes
Q2 Result codes only in Originate mode

Sr=n

Set register *r* to *n*.

Sr?

Show contents of S-Register *r*.

Vn

Verbal/numeric result codes. See DIP switch 2.

V0 Numeric codes
V1 Verbal codes

Xn

Result code set. Default is X4.

	Xn Setting				
Result Code	X0	X1	X2	X3	X4
0/OK	•	•	•	•	•
1/CONNECT	•	•	•	•	•
2/RING	•	•	•	•	•
3/NO CARRIER	•	•	•	•	•
4/ERROR	•	•	•	•	•
5/CONNECT 1200		•	•	•	•
6/NO DIAL TONE			•		•
7/BUSY				•	•
8/NO ANSWER				•	•
10/CONNECT 2400		•	•	•	•
13/CONNECT 9600		•	•	•	•
18/CONNECT 4800		•	•	•	•
20/CONNECT 7200		•	•	•	•
21/CONNECT 12000		•	•	•	•
25/CONNECT 14400		•	•	•	•
Functions					
Adaptive Dialing			•	•	•
Wait for 2nd Dial Tone (W)				•	•
Wait for Answer (@)				•	•
Fast Dial			•		•

Yn

Select power-on/reset default configuration.

Y0 Default is &F1–Hardware Flow Control template settings in NVRAM
Y1 Default is &F2–Software Flow Control template settings in NVRAM

Z

Reset to software defaults.

&A*n* Enable/disable ARQ result codes.

- &A0 ARQ result codes disabled
- &A1 ARQ result codes enabled–Default
- &A2 V.32 modulation indicator added
- &A3 Protocol indicators added–error control and data compression–Default

&B*n* Modem's serial port rate.

- &B0 Variable, follows connection rate
- &B1 Fixed serial port rate–Default
- &B2 Fixed in ARQ mode, variable in non-ARQ mode

&C*n* Carrier Detect (CD) signal. See DIP switch 6.

- &C0 CD override
- &C1 Normal CD operations

&D*n* Data Terminal Ready operations. See DIP switch 1.

- &D0 DTR override
- &D1 Reserved
- &D2 Normal DTR operations

&F Load a read-only (non-programmable) factory configuration.

- &F0 Generic Template
- &F1 Hardware Flow Control Template
- &F2 Software Flow Control Template

&H*n* Transmit Data flow control.

- &H0 Flow control disabled
- &H1 Hardware flow control, Clear to Send (CTS)–Default
- &H2 Software flow control, XON/XOFF
- &H3 Hardware and software control

&I*n* Received Data software flow control.

- &I0 Flow control disabled–Default
- &I1 Your XON/XOFF signals go to your modem and to the remote system
- &I2 Your XON/XOFF signals go to your modem only
- &I3-4 Hewlett Packard: Host mode (&I3), Terminal mode (&I4)
- &I5 ARQ mode–same as &I2; non-ARQ mode–look for incoming XON/XOFF

&K*n* Data compression enabled/disabled.

- &K0 Data compression disabled
- &K1 Auto enable/disable–Default
- &K2 Data compression enabled
- &K3 MNP5 compression disabled

&M*n* Normal or Error Control (ARQ) mode (1200 bps and higher).

- &M0 Normal mode, error control disabled
- &M1-3 Reserved
- &M4 Normal/ARQ–Default
- &M5 ARQ mode only

&N*n* Data rate, phone line interface.

- &N0 Variable rate–Default
- &N1 300 bps
- &N2 1200 bps
- &N3 2400 bps
- &N4 4800 bps
- &N5 7200 bps
- &N6 9600 bps
- &N7 12,000 bps
- &N8 14,400 bps

COMMAND SUMMARY

&R*n*	Received Data hardware flow control, Request to Send (RTS).
	&R0 Reserved
	&R1 The modem ignores RTS
	&R2 Received Data to computer only on RTS–Default
&S*n*	Data Set Ready (DSR) operations.
	&S0 DSR override; always ON–Default
	&S1 Modem controls DSR
&T*n*	Test modes. See Appendix D for testing instructions.
&W	Write current configuration to NVRAM.
&Y*n*	Break Handling.
	&Y0 Destructive, but don't send Break
	&Y1 Destructive, expedited–Default
	&Y2 Nondestructive, expedited
	&Y3 Nondestructive, unexpedited
&Z*n*=*s*	Write phone number string *s* to NVRAM at position *n*.
+++	Escape to Online-command mode or, if S14=1, hang up and escape to Command mode.

DIP SWITCHES

Switch	Factory Setting	Function
1	UP	Data Terminal Ready (DTR) Operations
		UP Normal DTR operations: computer or terminal must provide DTR signal for modem to accept commands; dropping DTR terminates a call
		DOWN DTR always ON (Override)
2	UP	Verbal/Numeric Result Codes
		UP Verbal (word) results
		DOWN Numeric results
3	DOWN	Result Code Display
		UP Results suppressed (Quiet mode)
		DOWN Results enabled
4	UP	Command Mode Local Echo
		UP Keyboard commands displayed
		DOWN Display of commands suppressed
5	DOWN	Auto Answer
		UP Modem answers on first ring
		DOWN Auto answer suppressed
6	UP	Carrier Detect (CD) Operations
		UP Modem sends CD signal when it connects with another modem, drops CD on disconnect
		DOWN CD always ON (Override)
7	UP	Power-on and ATZ Reset Defaults
		UP Load NVRAM defaults
		DOWN Load factory (ROM) defaults
8	DOWN	"AT" Command Set Recognition
		UP Recognition disabled (Dumb Mode)
		DOWN Recognition enabled (Smart Mode)

S-REGISTERS

Register	Default	Function
S0	See DIP Switch 5	Sets the number of rings on which to answer in Auto Answer mode. When DIP switch 5 is UP, the modem answers on the first ring; S0=1 has the same effect. When DIP switch 5 is DOWN (factory setting), Auto Answer is disabled; S0=0 (modem answers on 0 rings, or never) has the same effect.
S1	0	Counts and stores the number of rings from an incoming call.
S2	43	Stores the ASCII decimal code for the escape code character. Default character is "+". A value of 128-255 disables the escape code.
S3	13	Stores the ASCII decimal code for the Carriage Return character. Valid range is 0-127.
S4	10	Stores the ASCII decimal code for the Line Feed character. Valid range is 0-127.
S5	8	Stores the ASCII decimal code for the Backspace character. A value of 128-255 disables the Backspace key's delete function.
S6	2	Sets the number of seconds the modem waits before dialing, the minimum value for which is 2. If set to X2 or X4, the modem dials as soon as it detects a dial tone (fast dials).
S7	60	Sets the number of seconds the modem waits for a carrier. May be set for much longer duration if, for example, the modem is originating an international connection.
S8	2	Sets the duration, in seconds, for the comma pause option.
S9	6	Sets the required duration, in tenths of a second, of the remote modem's carrier signal before recognition by the Sportster.
S10	7	Sets the duration, in tenths of a second, that the modem waits after loss of carrier before hanging up. If set to 255, the modem does not hang up when it loses carrier.
S11	70	Sets the duration and spacing, in milliseconds, of tone dialing.
S12	50	Sets the duration, in fiftieths of a second (20-msec. units), of the guard time for the +++ escape code sequence.
S13	0	S13=64 disables MNP level 3 (used for testing Level 2).
S14	0	If set to 1, the modem hangs up on receipt of the escape code, returns to Command mode and sends the NO CARRIER result code.

S-REGISTERS

Register*	Default	Function
S15	0	Bit-mapped. See Appendix B.
S16	0	S16=2 used for Dial Test, factory testing.
S18	0	Test timer, disabled when S18 is set to 0. Used to set the duration, in seconds, of modem diagnostics, before the modem automatically times out and terminates the test.
S19	0	Sets the duration, in minutes, for the Inactivity Timer, disabled when S19=0.
S21	10	Sets the length of Breaks, in 10-millisecond units, that the modem sends to the computer during MNP calls.
S22	17	Stores the ASCII decimal code for the XON character. Valid range is 0-127
S23	19	Stores the ASCII decimal code for the XOFF character. Valid range is 0-127.
S25	5	Sets the duration, in hundredths off a second, that DTR must be dropped for the modem to respond.
S27	0	Bit-mapped. See Appendix B.
S28	8	Sets the duration, in tenths of a second, of the V.21/V.23 fallback delay.
S34	6	Bit-mapped. See Appendix B.
S38	0	Sets an optional delay, in seconds, before a forced hang-up and clearing of the Transmit buffer when DTR drops during an ARQ call. Has no effect if ATH is used to terminate a call.

*Gaps in the numeric sequence indicate reserved registers.

RS-232C INTERFACE PIN DEFINITIONS*

Mac 8-Pin DIN	DB-25	DB-9	Circuit	Function	Signal Flow Terminal ↔ Modem
-	1	-	AA	Chassis Ground	↔
3	2	3	BA	Transmitted Data	→
5	3	2	BB	Received Data	←
2	4	7	CA	Request to Send	→
1	5	8	CB	Clear to Send	←
-	6	6	CC	Data Set Ready	←
4	7	5	AB	Signal Ground	↔
-	8	1	CF	Carrier Detect	←
-	12	-	SCF	Speed Indicate	←
1	20	4	CD	Data Terminal Ready	→
-	22	9	CE	Ring Indicate	←

* See Appendix B for detailed information on DB-25, DB-9, Macintosh, and three-wire interfaces.

DEFAULT SETTINGS

The following table lists the defaults stored in nonvolatile memory (NVRAM) when the modem is shipped.

Setting	Function
B0	ITU-T answer sequence
F1	Online local echo disabled
M1	Speaker ON during dial through CONNECT
P	Pulse dialing type
X4	All result codes
&A3	All protocol codes enabled
&B1	Fixed serial port rate
&G0	Guard tone disabled
&H1	Transmit Data hardware flow control
&I0	Received Data software flow control disabled
&K3	Data compression auto enabled/disabled
&M4	Normal ARQ mode
&N0	Variable connection rates
&P0	U.S. & Canada pulse dial ratio
&R2	Received Data hardware flow control
&S0	Data Set Ready (DSR) override
&T5	Deny remote digital loopback
&Y1	Breaks, computer to modem, destructive and expedited
&Z*n*=*s*	Stored phone number *s* at position *n*–Blank
S0=1	Auto Answer on first ring
S2=43	ASCII decimal escape code character
S3=13	ASCII decimal Carriage Return
S4=10	ASCII decimal Line Feed
S5=8	ASCII decimal Backspace
S6=2	Dial wait time, sec.
S7=60	Carrier wait time, sec.
S8=2	Dial command pause (,) time, sec.
S9=6	Carrier recognition wait time, 1/10th sec.
S10=7	Carrier loss wait time, 1/10th sec.
S11=70	Tone duration/spacing, msec.
S12=50	Escape code sequence guard time, 1/50th sec.
S14=0	AT +++, return to Online command mode
S19=0	Inactivity timer disabled
S21=10	Received Break length, 1/100th sec.
S22=17	ASCII decimal XON character
S23=19	ASCII decimal XOFF character
S25=5	DTR drop time, 1/100th sec.
S28=8	V.21/V.23 fallback delay, 1/10th sec.
S34=6	Bit-mapped. See Appendix B.
S38=0	Disconnect wait time, sec.
19.2 Kbps	Bit rate
8 bits	Word length
None	Parity